

## REMARKS

Applicant intends this response to be a complete response to the Examiner's **22 July 2009** Election Restriction Requirement. Applicant has labeled the paragraphs in his response to correspond to the paragraph labeling in the Office Action for the convenience of the Examiner.

### *Election of species*

The Examiner contends as follows:

1. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

Species **A**) = MRI Coil with closed saddle shaped structure, and overlapping layers forming capacitors

Species **B**) = Hybrid rectangular shaped MRI coil, superconducting legs, built in capacitors and metal members.

Species **C**) = Birdcage shaped resonator, constructed from a plurality of **species A**) arranged to form at least one small animal MRI imaging cavity. [The examiner notes that there are plurality grammatical errors in the independent claim, and it appears that this species requires the presence of at least two small animal MRI imaging cavities, because a plurality of coils from **species A**) are utilized together.]

Species **D**) = Birdcage shaped resonator, constructed from a plurality of **species B**) arranged to form at least one small animal MRI imaging cavity. [The examiner notes that there are plurality grammatical errors in the independent claim, and it appears that this species requires the presence of at least two small animal MRI imaging cavities, because a plurality of coils from **species B**) are utilized together.]

Species **E**) = A small animal MRI apparatus, with a vacuum housing, at least one cylindrical aperture of coolant reservoir with coolant COOLing inlet coolant outlet cold plate and resonator comprising a plurality of coil apparatuses forming a cylindrical structure that surround each animal cavity permitting MRI imaging within each of the small animal cavities apertures.

Species **F**) = A small animal MRI apparatus, with a vacuum housing, at least one cylindrical aperture of coolant reservoir with coolant cooling inlet coolant outlet cold plate and resonator comprising a plurality of coils, having a closed flat rectangular shape for overlapping regions and built in capacitors, with each coil in thermal contact with the cold plate and where each cavity has three coils in a triangular arrangement therearound.

2. Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

3. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

4. The claims are deemed to correspond to the species listed above in the following manner:

Species **A**) = **Claim 1** and **dependent claims 2-6, 8-10**.

Species **B**) = **Claim 11** and **dependent claims 12-20**.

Species **C**) = **Claim 21** and **dependent claims 22-26, 28-30**.

Species **D**) = **Claim 31** and **dependent claims 32-40**.

Species **E**) = **Claim 41** and Newly added **dependent claims 43, 44**.

Species **F**) = **Claim 42**

The following claim(s) are generic to the following species:

**Claims 10, 20, 30, 40** are generic to species A, B, C, and D only

**Claims 2, 22** are generic to **species A**, and C only

**Claims 3, 23** are generic to **species A**, and C only

**Claims 4, 24** are generic to **species A**, and C only

**Claims 5, 25** are generic to **species A**, and C only

**Claims 6, 26** are generic to **species A**, and C only

**Claims 8, 28** are generic to **species A**, and C only

**Claims 9, 29** are generic to **species A**, and C only

**Claims 12, 32** are generic to **species B**, and D only

**Claims 13, 33** are generic to **species B**, and D only

**Claims 14, 34** are generic to **species B**, and D only

**Claims 15, 35** are generic to **species B**, and D only

**Claims 16, 36** are generic to **species B**, and D only

**Claims 17, 37** are generic to **species B**, and D only

**Claims 19, 39** are generic to **species B**, and D only

5. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:

**Species A)-->E)** Lack the limitation of: each coil in thermal contact with the cold plate and where each cavity has three coils in a triangular arrangement therearound as set forth in **species F)**.

**Species A)-->D), and F)** Lack the combinational limitations of: A small animal MRI apparatus, with a vacuum housing, at least one cylindrical aperture of coolant reservoir with coolant cooling inlet coolant outlet cold plate and resonator comprising a plurality of coil apparatuses, and forming a cylindrical structure that surround each animal cavity permitting MRI imaging within each of the small animal cavities apertures. [The examiner notes that the coil apparatuses of species E) are entirely unspecified, therefore the structure of species E) does not require the structural components of species A)-->D), or Species F).

**Species A)-->C) , and E), F)** Lack the structural feature of a birdcage resonator defining an animal insertion cavity constructed from a plurality of hybrid coils having a closed rectangular shape, separating dielectric layers, built-in capacitors, elongated superconducting legs, metal members, with overlap occurring an opposite faces of the metal members, in combination as set forth in applicant's Species D).

**Species A)-->B) , and D), E), F)** Lack the structural feature of a birdcage resonator defining an animal insertion cavity constructed from a plurality of four member closed saddle shaped MRI coils, each coil having four members, separating dielectric layers, and capacitors formed from overlapping, in combination as set forth in applicant's Species e).

**Species A), and e), D), E), F)** Lack the structural feature of being a nonbirdcage, hybrid MRI coil of closed rectangular shape, separating dielectric layers, metal members ,superconducting legs and built-in capacitors, taken in combination as set forth in applicant's Species B).

**Species B), e), D), E), and F)** Lack the structural feature of being a four member non-birdcage, MRI coil of closed saddle shape, having separating dielectric layers, and capacitors formed by overlapping, taken in combination as set forth in applicant's Species A).

6. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

7. The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Applicants traverse part of the election requirement and argue that Species A, C and E all require saddle-shaped coils. The coils of **Species A** are used to construct the birdcage resonator of **Species C** and the cylindrical structure of **Species E**. Thus, all three include a common and

necessary feature, namely the saddle-shaped coil assembly. Applicants, therefore, respectfully request that Species A, C and E be combined together into a single species as a search for the saddle-shaped coils will bring up all components that include such a coil configuration.

If the Examiner maintains that Species A, C and E are distinct, the Applicants select Species E as represented by new claims 45-56. Applicants believe that no new fees are due as Applicants have canceled or withdrawn more claims that have been added. Moreover, Applicants expressly reserve the right present under the Patent Law to file divisional applications on all unelected species and continuations on any invention disclosed, but not claimed in the present application.

### ***Priority Still Unresolved***

The Examiner contends as follows:

8. The examiner has noted applicant's remarks in the response of April 13, 2009; however, the priority data is still inconsistent.

9. While the examiner can verify the validity of the provisional US application 60/537,782, filed January 20, 2004, the applicant provided PCT application number for priority does not match The PCT application number submitted with the instant application. The PCT associated with US provisional application number 60/537,782 is still different than the serial number of the PCT provided by the applicant in the continuation data of the instant application.

10. Applicant is required to take whatever steps are necessary in order to perfect the claim for priority. Potential corrective actions may include any of the following: a new oath/declaration, a corrected filing receipt, an amended priority paragraph at the beginning of applicants' written description within the specification of the instant application, and/or Payment of all required fees.

11. The actual PCT application number associated with US provisional application number **60/537,782 is PCT I US20051 001813** which is different than the PCT application number provided in applicant's original specification, oath declaration and Disclosure.

12. The examiner must reiterate, this priority concern, because there is no corrected filing receipt currently present within applicant's electronic application at the USPTO.

Applicants have filed a documents with the United States PCT Receiving Office requesting a correction of the information associated with the case. The Examiner can review the filing on-line.

### ***Information Disclosure Statement***

The Examiner stated as follows:

13. The information disclosure statement(s) (IDS)'s submitted on **June 20th 2006** is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement. The initialed and dated information disclosure statement (IDS) submitted on **June 20th 2006** was previously attached to the Office action of November 12 2008.

Applicants acknowledge the statements of the Examiner.

### ***Drawings***

The Examiner stated as follows:

14. The corrected drawings received April 13, 2009 are proved by the examiner.

Applicants acknowledge the statements of the Examiner.

***Claim Objections Scope of Claims Is Still Unclear***

15. **Amended Claims 41 and 42** stand still objected to because of the following informalities:

The Examiner contends as follows:

A) these two claims still have numerous inconsistencies with respect to Singular versus plural tense. It is unclear whether applicants claim is referring to one animal cavity or more than one animal aperture?/cavity? Based on the specification, and because plural coils are being used, it appears to the examiner that at least two small animal apertures/cavities must be present in the embodiment of amended Claims 41 and 42. **Additionally consistent antecedent basis is needed;** the same component cannot be referred to as an aperture in one part of the claim and a cavity in the second part of the claim.

Applicants have amended claim 42 (now withdrawn) and canceled claim 41 and replaced it with new claim 45. Applicants believe that all the inconsistencies have been removed or resolved. Applicants, therefore, respectfully request withdrawal of these objections.

The Examiner contends as follows:

B) In both Amended claims 41 and 42. The adaptation itself which applicant has made to the cylindrical cavity is undefined. When the words "adapted to" are in a claim the adaptation made must be set forth. A possible solution to this error is to use the word "configured" Instead.

Applicants have amended claim 42 (now withdrawn) and canceled claim 41 and replaced it with new claim 45. Applicants thank the Examiner for the kind suggestion, which has been taken and the claims so amended. Applicants, therefore, respectfully request withdrawal of these objections.

***Claim Rejections - 35 USC § 112***

17. **Claims 41 and 42** stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner contends as follows:

[See the Detailed explanations above, where the numerous grammatical issues, and singular

versus plural inconsistencies, create a problem with the claimed scope of these claims, and the examiner cannot determine what the actual structure is that is being recited. If the structure in amended independent claims, is supposed to be a single integrated structure which has at least two separate areas for receiving small animals within the single integrated structure.] Clarification and correction is needed. If applicant has any concerns as to the remaining grammatical, single versus plural, or antecedent basis, issues with respect to amended Claims 41 and 42. Applicant's representative may feel free to contact the examiner for a telephonic interview.

Applicants have amended claim 42 (which is now withdrawn) and replaced claims 41 with claim 45. Applicants believe that the amended claims address all of the Examiner's rejections. Applicants, therefore, respectfully request withdrawal of these rejections.

### ***Prior Art of Record***

The Examiner contends as follows:

The prior art made of record from the November 12, 2008 office action is still considered pertinent to applicant's disclosure. However due to the numerous amendments, which resulted in each of the independent claims, corresponding to a separate species, and necessitating the election of species herein. The examiner will continue with the examination on their merits process, once applicant has responded with the species election

A) **Wong et al.**, US patent **6,377,047 B1** issued **April 23, 2002**, filed June 8, 2000.

Applicants acknowledge that Examiner contention, but note that Wong et al. does not disclose, teach or even direct an ordinary artisan to contemplate coils having curvilinear superconducting members arranged in a saddle-shaped configuration and cannot anticipate or render the elected claims obvious.

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

**The Commissioner is authorized to charge or credit Deposit Account 501518 for any additional fees or overpayments.**

Respectfully submitted,

Date: **24 August 2009**

**/Robert W. Strozier/**

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